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### ABSTRACT

A system for generating a digital output signal representing a captured image includes a sensor for capturing the image and generating a sensor output signal. A gain control amplifier is coupled to the sensor and receives the sensor output signal. The gain control amplifier has controls for applying various levels of gain to the sensor output signal. An analog-to-digital converter is coupled to the gain control amplifier and generates the digital output signal representing the captured image. A processor is coupled to the analog-to-digital converter and the gain control amplifier. The processor provides a control signal to the gain control amplifier for adjusting the level of gain applied by the amplifier.